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The winner takes it all? Characteristics of adolescent at-risk/problem gamblers in Switzerland

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Abstract

Background: Gambling has and still entertains people in almost all societies throughout the world. Western societies have faced considerable changes in the amount and accessibility of gambling possibilities during the last decades, and the rates of both adolescent gamblers and problem gamblers have increased significantly.

Objective: To determine the characteristics of at-risk and problem adolescent gamblers in Switzerland.

Subjects: The study population consisted of 3134 students (1669 females) attending post-mandatory education in 15 randomly chosen centres. Participants were divided into non- (n=2207), non-problematic (n=754) and at-risk/problematic gamblers (n=176).

Methods: Both gambling groups were compared to non-gamblers on socio-demographic measures, substance use and Internet use. Overall, 29.6% had gambled during the past year and 5.6% had gambled in a risky or problematic way. Compared to non-gamblers and after controlling for potential confounders, non-problem gamblers were significantly more likely to be male, apprentices and to misuse alcohol. At-risk/problematic gamblers were additionally more likely to smoke cannabis, to be problematic Internet users and to be non-Swiss than non-gamblers.

Conclusion: At-risk and problematic adolescent gambling is associated with other health risk behaviours. Health practitioners should include gambling in the psycho-social screening and preventive counselling of adolescents.

Introduction

Gambling has and still entertains people in almost all societies throughout the world. Western societies have faced considerable changes in the amount and accessibility of gambling possibilities during the last decades (1). Simultaneously, the rates of adolescent gamblers and problem gamblers have increased significantly (2). Moreover, new and ubiquitous accessible gambling technologies using the Internet and mobile phones (3) raise growing public health concerns on adolescent gambling (4). This is particularly true since gambling seems to be widely socially accepted but not necessarily considered as a risk behaviour and, similarly to smoking or drinking, evokes feelings of adulthood, maturity and independence (5).

Gambling is commonly defined as “wagering money or something of value on an event having an uncertain outcome (...)” (6). Gambling is referred to as pathological when there is a continuous or periodic loss of control over gambling behaviour. Diagnostic criteria for pathological gambling are: irrational thinking, erroneous cognition, constant thinking about gambling and the acquisition of money which can be spent for gambling, and the inability to stop even if desired or if adverse consequences are experienced (7). Gambling behaviour that already begins to cause personal, social or interpersonal problems (8) but does not meet all of the diagnostic criteria is characterised as “at risk” or “problem gambling” (9).

Studies have shown that 4%–8% of adolescents report gambling related problems and another 10%–15% are at risk of developing such problematic behaviours (2, 10). This is 2–4 times the prevalence rate of adults (2) and gives reason to consider youths as a special at-risk group (11). Moreover, adolescents are more vulnerable to the negative consequences of problem gambling (12), such as family or friend relationship difficulties, delinquency, depression and suicide (13).

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Data on at-risk/problem juvenile gambling help understand the aetiology of these disorders and develop appropriate prevention and treatment strategies (14). This is particularly warranted as problem gamblers, compared to youths addicted to illegal drugs or alcohol, are not easily identifiable because they lack observable symptoms or signs (12). The “risk factor model”, developed by Griffiths and Wood (12) is built on characteristics that have been identified in the empirical research literature to be related with youths at high risk for developing gambling related problems. Some of these presumed risk factors are being male, aged between 16 and 25, having an early age of onset, being depressed, having experienced a big win in the beginning of the gambling activities, or acting delinquent (15). Other authors have found a link between gambling pathology and lower socioeconomic status (16), non-intact family structure (4) and lower education (17).

It is known that an important number of problem youth gamblers are also engaging in other risky behaviours such as substance use (18), delinquency (19) or risky sexual behaviour (20) what Jessor and Jessor described as “the problem behaviour syndrome” (21). All these behaviours provide immediate pleasure but lack of consideration of long-term consequences (22). Possibly, the associations between these behaviours are partially caused by common risk factors such as low self-control and high sensation seeking (23), having deviant friends or stemming from a lower income family (16).

The present paper aims to determine the characteristics of at-risk/problem adolescent gamblers resident in the Canton of Bern, Switzerland, in order to facilitate early identification of youth problem gamblers and to develop appropriate intervention strategies.

Methods

Data were drawn from a survey on gambling among adolescents in the Canton of Bern (24) conducted from January to March 2012. Students of first and second year (aged 15–18 years) of 15 randomly chosen post-mandatory education centres in Bern (six high schools, seven vocational schools and two schools of general education) were asked to complete an anonymous online questionnaire including 60 questions about socio-demographic factors, gambling, Internet use and substance use. The completion process took place in the computer science rooms of the respective schools and was either supervised by a field investigator or by the teachers themselves.

Out of 3272 eligible adolescents, 89 (2.7%) did not want to participate in the study and 49 (1.5%) had to be excluded as they did not complete the questionnaire correctly. The final sample included 3134 participants.

Measures

Gambling behaviour: Respondents were asked if they had participated in any gambling activity during the last 12 months. For those answering positively, the evaluation of the gambling level was based on the South Oaks Gambling Screen Revised for Adolescents (SOGS-RA) (19). According to the SOGS-RA score, subjects were divided into three categories: Non-problematic gamblers (SOGS-RA < 2), at risk gamblers (SOGS-RA ≥ 2 and < 4) and problem gamblers (SOGS-RA ≥ 4). Given the small number of students in the at risk and problem gamblers categories, we combined them in one single category for analysis.

Socio-demographic variables: Socio-demographic variables included gender, nationality (Swiss, Non-Swiss) and age (≤ 15, 16–17, ≥ 18 years). The measure of family socio-economic status (SES) was based on a question from the ESPAD Survey (25) (“Compared to other families in Switzerland, do you think the financial situation of your family is...”) with seven possible answers ranging from *very above average* to *very below average* and which were grouped in *below average*, *average* and *above average*. The variable family structure was dichotomised into *parents together* and *other situations*. Finally, the variable school type allowed differentiating between *students* (high school and general education) and *apprentices* (vocational school).

Substance use: Questions about substance use were based on the SMASH2002 survey (26). Tobacco consumption was dichotomised into smokers (smoked during the last 30 days) and non-smokers (former smokers and abstainers). Further, alcohol misuse was measured by asking the number of alcoholic intoxications (drunkenness) during the last 30 days (none/at least once). Cannabis use during the last 30 days was dichotomised into none and at least once.

Internet use: Internet use was assessed by means of the Internet Addiction Test (IAT) (27, 28). The IAT includes 20 questions (such as “How often do you find that you stay on-line longer than you intended?”) with possible answers ranking from 0 (Never/Does not apply) to 6 (Always). A test score greater or equal to 50 is considered as indicating problematic Internet use (20).

Statistical analysis: We first performed a bivariate analysis comparing the three groups of participants (non gamblers, non-problem gamblers and at risk/problematic gamblers) with the different socio-demographic factors, using the χ^2 test for categorical variables. Results are given as point prevalence.

All significant factors at the bivariate level were then entered in a multinomial logistic regression model. The non-gambling group served as the reference category. Results are given as relative risk ratios (RRR) with 95% confidence intervals.

To obtain a better picture of the relations between all the variables (dependent and independent) considered in this study, we also computed a log-linear model, a non-directional method allowing to include all possible associations between variables (29). Preliminary computations showed that associations of order higher than two were mostly non-significant, so we included only bivariate relations and the main effect of each variable into the starting model. We performed then a selection of the associations between variables using the Bayesian information criterion (BIC) (30), the goal being to keep only necessary relations. BIC allowed us to take into account both

the quality of fit and the complexity of the model, leading to a parsimonious final model. Results are presented as a diagram showing all remaining significant associations in the final model.

The significance level was set at 0.05 for all analyses. Stata 12.1 (StataCorp, College Station, TX, USA) was used for preliminary, bivariate and multivariate computations, and R 2.12.2 (The R Foundation for Statistical Computing) was used for log-linear analysis.

The study protocol was approved by the Ethics Commission of the University of Lausanne's School of Medicine.

Results

Among all participants who engaged in gambling during the last 12 months ($n=930$; 29.6%), the majority ($n=754$; 24%) did not report any gambling related problem, 3.7% ($n=115$) were considered as at-risk and 1.9% ($n=61$) as problem gamblers. Given the small number of at-risk and problem gamblers, both were combined in one single group for analysis ($n=176$; 5.6%).

All socio-demographic factors proved to be statistically significant at the bivariate level (Table 1), with the gender difference for problem gamblers in our population being highly evident with 81.8% of them being male. Additionally, groups could be distinguished in terms of a higher percentage of problem gamblers belonging to the older age group, being non-Swiss, living in non-intact families or in families with a lower SES. Regarding substance use, problem gamblers showed the highest prevalence rates of smoking, alcohol misuse and cannabis use

during the past month. Interestingly, non-gamblers were more likely to engage in problematic Internet use compared to those gambling in a non-problematic way.

At the multivariate level (Table 2), and compared to non-gamblers, non-problem gamblers were more likely to be male, to attend a vocational school and to have misused alcohol during the last month. Nevertheless, non-problem gamblers were less likely than non-gamblers to report problematic Internet consumption. At-risk/problematic gamblers differed from non-gamblers in terms of being predominantly male, more likely to have a non-Swiss background and to be apprentices. Additionally, at risk/problematic gamblers were significantly more likely to report alcohol misuse, cannabis use and problematic Internet consumption.

The results of the log-linear analysis (Figure 1) confirmed our findings with the exception of nationality which was not directly associated with gambling anymore. Apart from that, many relations between variables other than gambling remained significant in the final model. In particular, the use of substances, except for tobacco, and the addiction to Internet were directly related to gambling.

Discussion

The results of the study show that 29.6% of adolescents living in the canton of Bern had gambled during the last year and 5.6% were classified as at risk/problematic

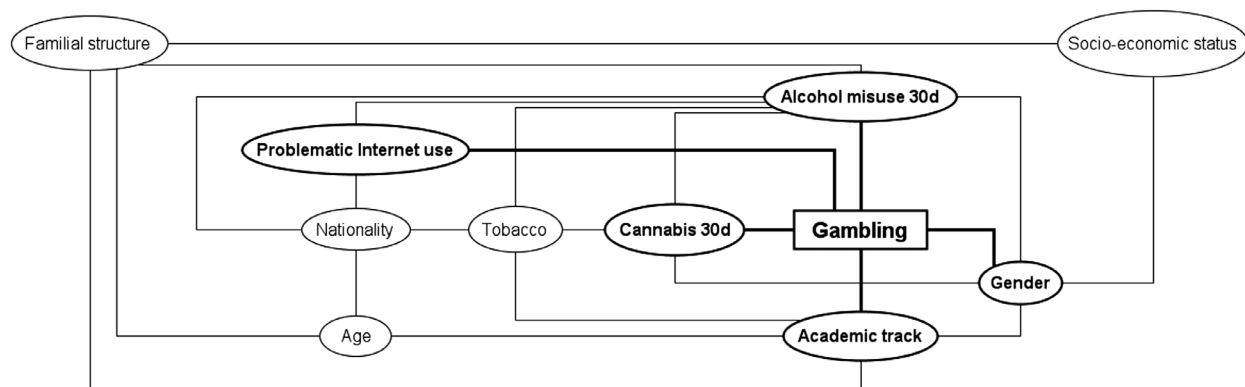
Table 1: Bivariate analyses comparing the three groups.

	Non-gamblers ($n=2207$)	Non-problem gamblers ($n=754$)	At-risk/problematic gamblers ($n=176$)	p-Value
Gender (male)	39.7%	59.4%	81.8%	<0.001
Age				<0.001
≤15 years	7.7%	6.8%	5.7%	
16–17 years	69.4%	62.9%	53.4%	
≥18 years	22.9%	30.4%	40.9%	
Nationality (Non-Swiss)	6.8%	7.0%	17.0%	<0.001
Family structure (living with both parents)	74.3%	73.2%	61.9%	<0.005
Academic track (apprentices)	51.4%	68.1%	82.4%	<0.001
Socio-economic status				<0.01
Above average	35.1%	40.3%	40.3%	
Average	56.7%	53.7%	48.3%	
Below average	8.2%	6.0%	11.4%	
Substance use during the last 30 days				
Tobacco smoking	26.7%	35.5%	54.0%	<0.001
Alcohol misuse	36.3%	56.4%	71.0%	<0.001
Cannabis use	16.5%	25.7%	45.5%	<0.001
Problematic Internet use	2.1%	1.2%	17.0%	<0.001

Table 2: Multinomial logistic regression analysis using non-gamblers as the reference category.

	Non problem gamblers	p-Value	Problem gamblers	p-Value
Gender (male)	1.78 (1.49–2.13)	<0.001	4.55 (3.01–6.88)	<0.001
Age		NS		NS
≤15 years	1 (reference)		1 (reference)	
16–17 years	0.79 (0.56–1.12)		0.64 (0.31–1.33)	
≥18 years	1.00 (0.69–1.46)		1.01 (0.47–2.15)	
Nationality (non-Swiss)	1.09 (0.78–1.54)	NS	2.02 (1.26–3.45)	<0.005
Familial structure (living with both parents)	0.95 (0.78–1.16)	NS	1.28 (0.89–1.83)	NS
Academic track (apprentices)	1.68 (1.38–2.03)	<0.001	2.81 (1.81–4.36)	<0.001
Socio-economic status		NS		NS
Above average	1.12 (0.93–1.35)		1.15 (0.80–1.64)	
Average	1 (reference)		1 (reference)	
Above average	0.74 (0.51–1.07)		1.06 (0.59–1.91)	
Substance use (last 30 days)				
Tobacco smoking	0.97 (0.78–1.19)	NS	1.40 (0.96–2.05)	NS
Alcohol misuse	1.93 (1.59–2.34)	<0.001	2.21 (1.50–3.28)	<0.001
Cannabis use	1.15 (0.91–1.46)	NS	1.73 (1.17–2.57)	<0.05
Problematic Internet use	0.46 (0.22–0.96)	<0.05	6.07 (3.46–10.66)	<0.001

NS, Non significant. Results are presented as relative risk ratios with 95% confidence intervals.

**Figure 1:** Log-linear analysis. Direct and indirect relationships between variables. Variables and paths directly associated to at risk/problematic gambling appear in bold.

gamblers. These findings are concordant with previous results (10, 31) and support reports of the juvenile gambling prevalence being twice that found for adults in Switzerland (1).

As shown in the literature (32), our results confirm that older and non-Swiss male adolescents are more likely to engage in problematic gambling, but only nationality and gender remain significant for problem gamblers at the multivariate level. A possible explanation for this finding is that migrants could consider gambling as an easy way to reach a higher living standard. Whereas chances for economic stability are not equal in the working world, gambling offers the same chance to succeed for everybody (33). This may also be true for individuals with a lower SES. Nevertheless, contrary to what

has been shown previously (17), we found no support for the relationship between problem gambling and family structure and SES when controlling for other socio-demographic factors.

The overrepresentation of male gamblers is probably due to their propensity to sensation-seeking (34). Even though this personality trait might be less intense among females, it is possible that girls catch up in prevalence over time as it has been shown for smoking and alcohol use (35). This theory finds support in the literature mentioning the “telescoping effect”. Therefore, women start gambling later than men but develop gambling problems faster (36). Moreover, Ferris et al. (37) reflected on the suitability of the SOGS for females as there was a low rate of female problem gamblers in the original sample. Both

factors might implicate a need for more sensitive screening instruments for female gamblers.

We found gambling to be more frequent among those attending a vocational school. An explanation for this association could be that doing an apprenticeship goes along with a small salary that provides them with more pocket money that can be spent on gambling activities. Furthermore, apprentices are exposed earlier than high school students to an adult working environment that may encourage the adoption of adult behaviours such as gambling.

In line with the problem behaviour theory (21), problem gamblers were significantly more involved in substance consumption and problematic Internet use. The participation in these problematic behaviours may predispose participation in another one but the direction of this relationship still needs to be determined (6).

Interestingly, tobacco use was significantly related to gambling problems at the bi-variate level whereas this relationship disappeared at the multivariate level. This could be explained by the Swiss law on smoking prohibition in public places. Bars, often attended places by youths where skill games in comparison to games of chance are still allowed, offer legal access to gambling for adolescents (18).

The log-linear analysis showed a direct association between gambling and alcohol misuse, problematic Internet use and cannabis consumption but did not include tobacco smoking. According to Kandel's Gateway Theory (38), smoking precedes cannabis use which, in turn, paves the way for the use of other illegal drugs. This may suggest that adolescents who gamble at a problematic level may be more likely to engage in an already higher level of substance use at the same time (17). Summing up, our findings speak in favour of recognising gambling as part of a larger problem behaviour and including it into the psychosocial screening and preventive counselling of adolescents.

The main strength of our study is that it is based on a large representative sample. However, the results must be interpreted in light of some limitations. First, the cross-sectional design of this study did not allow drawing any conclusions about causality. Second, the study sample did not include adolescents outside the school system. The relationship between gambling behaviour and school enrolment still needs to be determined given the contradictory findings in the literature (39, 40). Nevertheless, as 90% of Swiss adolescents follow post-mandatory education, the present results represent the majority of youths in this age group. Finally, parental gambling behaviour was not included

in our study sample, whereas it seems to be considerably associated with adolescent gambling (8).

Implications for policy, prevention and treatment strategies

Bars and restaurants offer easily accessible skill game opportunities for youths. As observed with the law on smoking prohibition, a consequent skill-game limitation in these places could similarly diminish adolescent gambling rates. Concerning the control of adolescent online gambling behaviour, it is important to develop appropriate regulation instruments.

From a societal perspective, there is a need to deter adolescents from engaging in any form of risk behaviour by addressing common underlying risk factors. Additionally, it is warranted to raise awareness about the negative consequences of gambling. Also parents should be provided with information about problem gambling as they do not always consider gambling as a risk behaviour (12). Through screening, an early identification of adolescents with gambling problems will allow to establish an early treatment and improve the prognosis.

Available treatment and support services for adolescents, adapted to the specific needs of this age group are warranted (4), especially in view of the small percentage of juvenile problem gamblers seeking professional help (41). Telephone help-lines and Internet websites may provide the necessary anonymity to ask for preliminary help and orientation. Adolescents in need of more specific help might receive contact information about available services they can address (4). Additionally, it should be noted that adolescents who gamble but do not engage in other risk behaviours at the same time may demand different support from those engaging in several risk behaviours simultaneously (16). Consequently, treatment needs to be adapted to the adolescent's circumstances and needs.

Conclusion

We found that adolescent at-risk and problem gambling is correlated with a set of specific factors. Clearly, longitudinal studies are needed to investigate causal relationships between the different associated factors and to evaluate the best prevention strategies. Moreover, it would be important to understand the role of parental gambling and peer-pressure in the development of risky and problematic gambling behaviour.

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